

### **AMENDMENTS TO THE CLAIMS**

The following listing of the claims shall replace all previous listings of the claims.

#### **Listing of Claims:**

1. (Currently amended) In a Carrier Interferometry (CI) transmitter:  
a CI coder adapted to encode at least one data sequence onto a CI code to produce at least one data-bearing code vector and to adjust subcarrier weights, and  
a modulator adapted to modulate the at least one data-bearing code vector onto a plurality of subcarriers.
2. (Previously Presented) The CI transmitter recited in claim 1 wherein the modulator includes an invertible transform module.
3. (Previously Presented) The CI transmitter recited in claim 2 wherein the invertible transform module is adapted to perform at least one of a Fourier transform, a chirp Z transform, and a sliding transform.
4. (Previously Presented) The CI transmitter recited in claim 1 wherein at least one of the modulator and the CI coder is adapted to scramble CI codes generated by the CI coder.
5. (Previously Presented) The CI transmitter recited in claim 1 wherein at least one of the modulator and the CI coder is adapted to provide frequency variations to the subcarriers.
6. (Previously Presented) The CI transmitter recited in claim 1 wherein the CI coder is adapted to provide for channel coding.

7. (Previously Presented) The CI transmitter recited in claim 1 wherein at least one of the modulator and the CI coder is adapted to dynamically allocate subcarriers for at least one communication link.

8. (Previously Presented) The CI transmitter recited in claim 1 wherein the CI coder is adapted to perform at least one CI coding algorithm configured to non-uniformly spread the at least one data sequence across the plurality of subcarriers.

9. (Currently amended) In a Carrier Interferometry (CI) receiver:  
a demodulator adapted to demodulate at least one data-bearing CI code vector modulated on a plurality of subcarriers, and  
a CI decoder adapted to decode at least one received data sequence impressed onto the CI code vector and to adjusted subcarrier weights.

10. (Previously Presented) The CI receiver recited in claim 9 wherein the demodulator includes an invertible transform module.

11. (Previously Presented) The CI receiver recited in claim 10 wherein the invertible transform module is adapted to perform at least one of a Fourier transform, a chirp Z transform, and a sliding transform.

12. (Previously Presented) The CI receiver recited in claim 9 wherein at least one of the demodulator and the CI decoder is adapted to descramble CI codes.

13. (Previously Presented) The CI receiver recited in claim 9 wherein at least one of the demodulator and the CI decoder is adapted to compensate for subcarrier frequency variations.

14. (Previously Presented) The CI receiver recited in claim 9 wherein the CI decoder is adapted to provide for channel decoding.

15. (Previously Presented) The CI receiver recited in claim 9 wherein at least one of the CI decoder and the demodulator are adapted to perform successive interference cancellation.

18-20. (Canceled)